Claims

1. Method of operating a wind turbine, wherein rotor windings of an induction generator, which comprises stator coils coupled to a voltage grid, fed with rotor currents by a feed-in unit are driven by a rotor of the wind turbine; wherein the frequencies of the fed-in rotor currents are controlled depending on the rotor rotation frequency and the feed-in unit is electrically decoupled from the rotor windings in the case predetermined variations of the grid voltage amplitude

characterized in that

the rotor current feed-in is resumed after the decoupling caused by the variation of the grid voltage amplitude, when the currents generated in the rotor windings by the variation have declined to a predetermined value.

2. Method according to claim 1, characterized in that

the rotor currents are fed in via a converter coupled to the grid voltage, in particular via an intermediate DC voltage converter with a rotor-sided rotor current converter and a grid-sided grid converter.

3. Method according to claim 2, characterized in that

during the decoupling the grid converter remains coupled to the grid and the rotor current converter is blocked.

4. Method according to any of the preceding claims, characterized in that

during the decoupling the rotor windings are short-circuited.

5. Wind turbine for conducting a method according to any of the preceding claims comprising

a rotor with at least one rotor blade, the rotor being rotatably arranged with regard to a substantially horizontal rotor axis;

an induction generator whose rotor windings are coupled to the rotor and whose stator coils can be coupled to a voltage grid;

a feed-in unit for feeding currents into the rotor windings;

a control unit for controlling the frequency of the fed-in currents depending on the rotor rotation frequency, and

an emergency unit which can be operated to electrically decouple the feed-in unit from the rotor windings in case of variations of the grid voltage amplitude,

characterized in that

the emergency unit comprises a release arrangement for releasing the rotor current feed-in after decoupling, when the currents generated in the rotor windings by variation of the grid voltage amplitude triggering the decoupling are declined to a predetermined value.

6. Wind turbine according to claim 5, characterized in that

the rotor is coupled to the rotor windings via a gear unit.

7. Wind turbine according to any of claims 5 or 6, characterized in that

the feed-in unit comprises a converter coupled to the grid voltage.

8. Wind turbine according to claim 7, characterized in that

the converter is an intermediate DC voltage converter with a rotor-sided rotor current converter and a grid-sided grid converter.

9. Wind turbine according to any of claims 5 to 8, characterized in that

the emergency unit comprises a crow bar for short-circuiting the rotor windings.

10. Wind turbine according to any of claims 5 to 9, characterized in that

the control unit is adapted for controlling the amplitude position and/or the phase position of the currents fed into the rotor windings.